

PATENT
09/042,460
Docket 019/224

CLAIM AMENDMENTS

1 to 4. *Cancelled*

5. (*Withdrawn*) An isolated, purified or recombinant peptide encoded by the polynucleotide of claim 20.

6 to 8. *Cancelled*

9. (*Withdrawn*) An isolated, purified or recombinant antibody, specifically immunoreactive under immunologically reactive conditions, to the protein of claim 5.

10 to 19. *Cancelled*

20. (*Currently amended*) An isolated, purified or recombinant polynucleotide encoding a telomerase reverse transcriptase protein, wherein said protein:

- (i) has at least 90% sequence identity to SEQ. ID NO:2; and,
- (ii) has telomerase catalytic activity when associated with telomerase RNA component ; and
- (iii) contains at least one of the following amino acid motifs:

- Motif T: W-X₁₂-FFY-X₁-TE-X₁₁-R-X₃-W;
- Motif 1: LR-X₁-IPK;
- Motif 2: R-X₁-I-X₁₅-K;
- Motif A: P-X₃-F-X₂-D-X₄-YD;
- Motif B: Y-X₄-G-X₂-QG-X₉-S;
- Motif C: DD-X₁-L; or
- Motif D: A-X₂-F-X₁₈-K;

wherein X_n is a sequence of unspecified amino acids of length "n".

21. (*Previously presented*) An isolated, purified or recombinant polynucleotide encoding a telomerase reverse transcriptase protein having the amino acid sequence of SEQ. ID NO:2.

PATENT
09/042,460
Docket 019/224

22. *(Currently amended)* An isolated, purified or recombinant polynucleotide comprising the sequence of SEQ. ID NO:1 or fragment thereof that encodes a protein having telomerase activity when associated with telomerase RNA component; wherein the protein contains at least one of the following amino acid motifs:

- Motif T: W-X₁₂-FFY-X₁-TE-X₁₁-R-X₃-W;
- Motif 1: LR-X₁-IPK;
- Motif 2: R-X₁-I-X₁₅-K;
- Motif A: P-X₃-F-X₄-D-X₄-YD;
- Motif B: Y-X₄-G-X₂-QG-X₂-S;
- Motif C: DD-X₁-L; or
- Motif D: A-X₂-F-X₁₈-K;

wherein X_n is a sequence of unspecified amino acids of length "n".

23. *(Previously presented)* An isolated cell transfected with the polynucleotide of claim 20, or progeny thereof.

24. *(Previously presented)* An isolated cell transfected with the polynucleotide of claim 21, or progeny thereof.

25. *(Previously presented)* An isolated cell transfected with the polynucleotide of claim 22, or progeny thereof.

26. *(Previously presented)* An expression vector comprising the polynucleotide of claim 20.

27. *(Previously presented)* An expression vector comprising the polynucleotide of claim 21.

28. *(Currently amended)* ~~A mouse cell~~ An isolated mouse cell in which an endogenous ~~mTERT gene~~ gene encoding mouse telomerase reverse transcriptase (mTERT) has been mutated by recombinant means, or progeny of said cell.

29 to 30. *Cancelled*

31. *(Currently amended)* The polynucleotide of claim 20, encoding a protein ~~that contains at least 10 consecutive amino acids of SEQ. ID NO:2~~ that is between about 50 and 150 kDa.

32. *(Currently amended)* The polynucleotide of claim 20, encoding a protein that contains ~~the mouse Motif T shown in Figure 5 (SEQ. ID NO:2).~~

PATENT
09/042,460
Docket 019/224

33. *(Currently amended)* The polynucleotide of claim 20, encoding a protein that contains the mouse Motif 1 and Motif 2 shown in Figure 5 (SEQ. ID NO:2).
34. *(Currently amended)* The polynucleotide of claim 20, encoding a protein that contains the mouse Motif A, Motif B, Motif C, and Motif D shown in Figure 5 (SEQ. ID NO:2).
35. *(New)* The polynucleotide of claim 20, encoding a protein that contains at least two of said motifs.
36. *(New)* The polynucleotide of claim 20, encoding a protein that contains at least four of said motifs.
37. *(New)* The polynucleotide of claim 20, encoding a protein that contains all of said motifs.
38. *(New)* The polynucleotide of claim 37, wherein the motifs occur in the order indicated in claim 20.
39. *(New)* The polynucleotide of claim 20, which hybridizes to a nucleic acid having the mTERT cDNA sequence in SEQ ID NO:1 at 5°C below T_m in 1 M sodium ion concentration, wherein T_m is the melting temperature under the same conditions of said nucleic acid hybridized to a complementary polynucleotide.
40. *(New)* An isolated, purified or recombinant polynucleotide encoding a protein that contains SEQ. ID NO:2, or a fragment thereof that has telomerase reverse transcriptase activity when associated with telomerase RNA component.
41. *(New)* A method of producing a telomerase protein, comprising expressing the polynucleotide of claim 20 in a host cell.
42. *(New)* A method of producing a telomerase protein, comprising expressing the polynucleotide of claim 39 in a host cell.
43. *(New)* A method of producing a telomerase protein, comprising expressing the polynucleotide of claim 40 in a host cell.